

IAP17 Rec'd PCT/PTO 23 DEC 2005

LISTING OF CLAIMS

Please replace pages 18-21 of the original English translation submitted herewith with substitute sheets 18-21 attached hereto, which includes a Listing of Claims incorporating Annexes under PCT Article 36. Original Claim 22 has been canceled in the Annexes. Please amend the claims on substitute sheets 18-21 as follows:

On new page 18, line 1, please delete the current heading "CLAIMS" and insert the following new heading:

--What is claimed is:--.

This listing of claims will replace all prior versions and listings of claims in the application:

Claim 1. (currently amended): An optical security element (1) having a substrate layer (14), wherein a first microstructure (17) for producing a first optically perceptible effect is shaped region-wise into the substrate layer (14) in a surface region (2; 5) of the substrate layer,

wherein characterised in that

the first microstructure (17) is a diffraction structure, in particular a diffraction grating, a diffraction structure for producing a hologram or a matt structure, that the surface region (2; 5) is divided into microscopically fine pattern regions (21 to 40; 51 to 90) and a background region (20; 50) and the first microstructure (17) is shaped in the pattern regions (21 to 39; 51 to 90) but not in the background region, that the microscopically fine pattern regions (21 to 39; 51 to 90) in the surface region (2; 5) are arranged in the form of a moire pattern into which a concealed item of information which can be evaluated by means of an associated verification element is encoded as a security feature, wherein the moire pattern has at least one line grating with a plurality of lines at a line spacing in the range of 40 to 200 µm and the line grating is phase-displaced in region-wise manner to produce the concealed information, and that the microscopically fine pattern regions (21 to 39; 51 to 90) are further substructured in accordance with a substructuring function which describes a microscopic substructuring, which serves as a further security feature, of the moire pattern and which encodes additional items of information in the surface region.

Claim 2. (currently amended): An optical security element according to claim 1, wherein ~~characterised in that~~ the first microstructure (17) is a first diffraction grating.

Claim 3. (currently amended): An optical security element according to claim 1, wherein ~~characterised in that~~ the first microstructure is a diffraction structure for producing a first hologram.

Claim 4. (currently amended): An optical security element according to claim 1, wherein ~~characterised in that~~ the first microstructure is a first matt structure.

Claim 5. (currently amended): An optical security element according to claim 1, wherein one ~~of claims 1 to 4 characterised in that~~ a reflecting surface (18) is arranged in the background region (20; 50).

Claim 6. (currently amended): An optical security element according to claim 1, wherein one ~~of claims 1 to 4 characterised in that~~ a second microstructure is shaped in the background region (20; 50), that microstructure being formed by a second diffraction grating which is different from the first diffraction grating.

Claim 7. (currently amended): An optical security element according to claim 1, wherein one ~~of claims 1 to 4 characterised in that~~ a second microstructure is shaped in the background region (20; 50), said second microstructure being formed by a diffraction structure for producing a second hologram.

Claim 8. (currently amended): An optical security element according to claim 1, wherein one ~~of claims 1 to 4 characterised in that~~ a second microstructure is shaped in the background region (20; 50), said second microstructure being formed by a second matt structure which is different from the first matt structure.

Claim 9. (currently amended): An optical security element according to claim 1, wherein the line grating has regions in which the lines of the line grating are curved.

Claim 10. (currently amended): An optical security element according to claim 1, wherein ~~one of claims 1 to 8 characterised in that~~ the moire pattern comprises two line gratings which are rotated relative to each other through at least 45 degrees.

Claim 11. (currently amended): An optical security element according to claim 1, wherein ~~one of claims 1 to 8 characterised in that~~ the moire pattern comprises a two-dimensional grating.

Claim 12. (currently amended): An optical security element according to claim 1, wherein ~~one of the preceding claims characterised in that~~ the average surface coverage of the moire pattern in relation to the resolution capacity of the human eye is constant.

Claim 13. (currently amended): An optical security element according to claim 1, wherein ~~one of the preceding claims characterised in that~~ the average surface coverage of the substructuring described by the substructuring function in relation to the resolution capacity of the human eye is constant.

Claim 14. (currently amended): An optical security element according to claim 1, wherein ~~one of claims 1 to 12 characterised in that~~ the average surface coverage of the moire pattern is varied by partially different substructuring (~~141, 151, 161, 171, 181~~).

Claim 15. (currently amended): An optical security element according to claim 1, wherein ~~one of the preceding claims characterised in that~~ the substructuring function describes a continuous substructuring pattern (~~41~~).

Claim 16. (currently amended): An optical security element according to claim 1, wherein ~~one of claims 1 to 12 characterised in that~~ the substructuring function describes a non-continuous substructuring pattern (~~42, 44, 45, 46, 47, 48~~).

Claim 17. (currently amended): An optical security element according to claim 15, wherein

~~characterised in that~~ the substructuring function describes a substructuring pattern (42, 44, 45) made up of a plurality of similar individual elements.

Claim 18. (currently amended): An optical security element according to claim 17, wherein ~~characterised in that~~ the spacings of the individual elements (44, 45) and/or their orientation (46, 47, 48) is varied for encoding of a further item of information but the average surface coverage of the substructuring pattern, which can be resolved by the human eye, remains constant.

Claim 19. (currently amended): An optical security element according to claim 1, wherein ~~one of claims 1 to 14 characterised in that~~ the substructuring function describes a microtext or nanotext which is preferably of a letter height in the range of 20 to 100 µm.

Claim 20. (currently amended): An optical security element according to claim 1, wherein ~~one of claims 1 to 14 characterised in that~~ a two-dimensional grating is superimposed on the substructuring function.

Claim 21. (currently amended): An optical security element according to claim 1, wherein ~~one of claims 1 to 14 characterised in that~~ the pattern regions (91, 92) are substructured with an asymmetrical surface profile and that the centroids of the pattern regions (91, 92) are phase-displaced in region-wise manner to produce the concealed information.